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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,896	03/31/2004	Clifford Earl Shamblen	129964/11863 (21635-0121)	7593
31450 7590 03/07/2007 MCNEES WALLACE & NURICK LLC 100 PINE STREET P.O. BOX 1166 HARRISBURG, PA 17108-1166			EXAMINER ZHU, WEIPING	
			ART UNIT 1742	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE			MAIL DATE	DELIVERY MODE
3 MONTHS			03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/814,896

Applicant(s)

SHAMBLEN ET AL.

Examiner

Weiping Zhu

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Status of Claims

1. Claims 1-26 remain for examination wherein claims 1, 5, 13, and 14 are amended and claims 24-26 are newly added.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-7, 9, 11, 12 and 14-23 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 57-164958 as stated in the Office action of October 19, 2006.

With respect to the amended features in the claims 1 and 14, JP ('958) discloses that the sintered high-alloy steel has a martensitic iron alloy matrix (claim 1). It has been well held where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical process, a prima facie case of either anticipation or obviousness has been established. In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977), MPEP 2112.01 [R-3] I. In the instant case, the sintered high-alloy steel of JP ('958) is produced by identical or substantially identical processes. The same microstructures and the same percentage of the microstructures having an acicular phase morphology as claimed in the instant claims 1 and 14 would be inherent in the sintered high-alloy steel of JP ('958) as in the claimed iron-based article.

With respect to the amended claim 5, the reasons for the rejections of claims 5 and 23 as stated in the Office action of October 19, 2006 still can be properly applied.

3. Claims 13 and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP ('958) as applied to the claims 1 and 14 above.

With respect to the amended claim 13, JP ('958) discloses that carbides and/or nitrides can be added to the mixture prior to the consolidation step (1st paragraph, page 10, the translation).

With respect to the new claims 24-26, JP ('958) discloses that Mn is present in the alloy powders (last paragraph, page 13) as claimed in the claim 26. It would be inherent that the vapor pressure of Mn is about 10 times greater than that of the iron-based metal at a melting temperature as claimed in the claim 24 and that Mn exhibits miscibility gap with the iron-based metal as claimed in the claim 25.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP ('958) in view of Fray et al. (WO 99/64638 or US 6,712,952 B1) as stated in the Office action of October 19, 2006.

5. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP ('958) in view of Armstrong et al. (US 5,958,106) as stated in the Office action of October 19, 2006.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6. Claims 1-4 and 6-9 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1-4, 5, 11, 12 and 13 of US 6,926,754 B2 as stated in the Office action of October 19, 2006. The amended feature of the instant claim 1 would not change the rejection for the reason stated in the paragraph 2 above.

7. Claims 14-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 and 14-19 of US ('754 B2) as stated in the Office action of October 19, 2006. The amended feature of the instant claim 14 would not change the rejection for the reason stated in the paragraph 2 above.

8. Claims 5, 11 and 12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 of US ('754 B2) in view of JP ('958) as stated in the Office action of October 19, 2006. The amended feature of the instant claim 5 would not change the rejection for the reason stated in the paragraph 2 above.

9. Claim 10 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 of US ('754 B2) in view of JP ('958) and further in view of Armstrong et al. ('106) as stated in the Office action of October 19, 2006.

10. Claims 21-23 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 of US ('754 B2) in view of UOC and further in view of JP ('958) as stated in the Office action of October 19, 2006.

11. Claim 13 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 of US ('754 B2) in view of JP ('958).

JP ('958) is further applied to the claimed limitations in the instant claim 13 for the same reasons as disclosed in the paragraph 3 above.

12. Claims 24-26 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over the claims 1 of US ('754 B2) in view of JP ('958).

JP ('958) is further applied to the claimed limitations in the instant claims 24-26 for the same reasons as disclosed in the paragraph 3 above.

Response to Arguments

13. The applicant's arguments filed on December 12, 2006 have been fully considered but they are not persuasive. It appears all of the method steps set forth in the instant claims are disclosed in the prior art set forth in the rejection above. Further the applicant has not pointed out any particular differences between the claimed process steps and the steps disclosed in the prior art.

First, the applicant argues that the inherency is not established by the statement that at least one of these alloying elements disclosed by JP ('958) would be thermophysically melt incompatible at the page 3 of the Office action of October 19, 2006. In response, it is noted that the melting temperature of W as one of the alloying

elements of JP ('958) is more than 400° C higher than that of iron and the difference in densities between W and the base iron metal is greater than 0.5 gram per cubic centimeter. These differences in the physical properties between W and the base iron metal would inherently lead to the thermophysical incompatibility.

Second, the applicant argues that JP ('958) does not disclose the claimed microstructures. In response, see the rejection for the amended features of claims 1 and 14 in the paragraph 2 above.

Third, the applicant argues that there is no objective basis set forth in the Office action of October 19, 2006 in the rejection of claim 8. In response, it is noted that the motivation to combine the processes of JP ('958) and Fray et al. (WO 99/64638) is stated clearly in the Office action as to reduce the cost for reduction and refining process as disclosed by Fray et al. (WO '638) (col. 4, lines 23-25 of US 6,712,952 B1 which is in the patent family of Fray et al. (WO '638)).

Fourth, the applicant argues that nothing in JP ('958) and Fray et al. (WO '638 or US 952 B1) suggests that the approach of Fray et al. (WO '638 or US 952 B1) would be operable and successful with the iron-based alloys of JP ('958). In response, the USPTO does not have the equipment and the capability required to test the combination. The expectation of the success based on the success of the approach of Fray et al (WO '638 or US 952 B1) on similar oxides is reasonable and sound.

Fifth, the applicant argues that neither JP ('958) nor Fray et al. (WO '638 or US 952 B1) teaches that a "compound mixture" having an iron base metal precursor may be chemically reduced by fused salt electrolysis. In response, the examiner notes that

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the rejection was based on the prior art's broad disclosure rather than preferred embodiments. See MPEP 2123. Fray et al. (WO '638 or US 952 B1) disclose that the invention may be used to remove the oxygen from a metal oxide. If a mixture of oxides is used, the cathodic reduction of the oxides will cause an alloy to form (col. 4, lines 18-22).

Sixth, the applicant argues that there is no objective basis set forth in the Office action in the rejection of claims 3 and 10. In response, it is noted the motivation to combine the processes of JP ('958) and Armstrong et al. ('106) is clearly stated in the Office action as to reduce the cost and environmental impact of the process as disclosed by Armstrong et al. ('106) (col. 2, lines 34-53).

Seventh, the applicant argues that nothing in JP ('958) and Armstrong et al. ('106) suggests that the approach of Armstrong et al. ('016) would be operable and successful with the iron-base alloys of JP ('958). In response, see the response for the fourth arguments.

Eighth, the applicant argues that neither JP ('958) nor Armstrong et al. ('016) suggests that a precursor compound for the base iron metal may be provided in a gaseous form. In response, the examiner notes that the rejection was based on the prior art's broad disclosure rather than preferred embodiments. See MPEP 2123. Armstrong et al. ('016) disclose that the invention is to provide a method and a system to produce metals (which would include iron) and non-metals from the exothermic reduction of the halides (reacted in a gaseous form) (col. 2, lines 43-47).

Ninth, the applicant argues that the examiner incorrectly based the double patenting rejection on an incorrect legal standard. In response, it is noted that iron which is the base metal of the instant disclosure is indeed in the Murkush group of the base metals of US 6,926,754 B2. The nonstatutory obvious type double patenting rejection in the Office action of October 19, 2006 is based on the legal standards that the conflicting claims are not identical, but at least one instant claim is not patentably distinct from the claim(s) of the US ('754 B20) because the instant claim is either anticipated by, or would have been obvious over the claim(s) of US ('754 B20).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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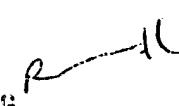
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WZ

2/21/2007


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